Remarks

Claims 1-3, 27-32, 72, 74-100, 102, and 103 are pending in the application. Claims 4-26, 73, and 101 were withdrawn from consideration by the Examiner as a result of a restriction requirement. Claims 1, 75, 76, 102, and 103 have been amended. No new matter has been added by virtue of this amendment.

Entry of the present amendment

Applicant respectfully requests entry of the amendments and reconsideration of the application in view of the amendments. The present amendments respond to the points made by the Examiner in the advisory action and place the present amendment in proper form for allowance or appeal. The amendments were not previously made because applicant was not previously aware of the perspective provided by the Examiner in the advisory action. Applicant believes that the present amendment more clearly provide the meaning intended and do not provide new issues for consideration or search. Therefore applicant requests entry of the amendment.

Entry of the withdrawn claims

Applicant requests that if independent claims are allowed that withdrawn claims dependent on the allowed claims be entered back into the case.

Claim Rejections--35 U.S.C. § 102

The Examiner rejects claims 1, 74, 75, and 103 under 35 U.S.C. § 102(b) as being anticipated by Person et al. Claim 1, as amended, states:

1. A method of fabricating an electronic device, comprising the steps of:

a) providing a coil of conductor and an insulation, **said coil of conductor having a coil outer surface and a coil inner surface**, said insulation on said coil outer surface, said coil of conductor further comprising a coil length;

b) **forming openings in portions of said insulation on said coil outer surface** and exposing conductor in said openings for **external contacts**; and

c) **dicing** completely through said coil to provide a plurality of short coils, wherein each said short coil has at least one said opening in said insulation, **wherein each of said plurality of short coils has a short coil length that is less than said coil length**.

Applicant would respectfully ask the Examiner to consider that claim 1 includes the limit, "**said coil of conductor having a coil outer surface and a coil inner surface.**" Person's coil has its loops each mounted on a substrate. The substrates interfere with the existence of a coil outer surface and a coil inner surface. Hence Person's coil does not have either a coil outer surface or a coil inner surface.

Applicant would further respectfully ask the Examiner to consider that claim 1 includes the limit, "**forming openings in portions of said insulation on said coil outer surface** and exposing conductor in said openings for **external contacts**."

Person forms openings for internal contacts between loops but Person does not provide an outer surface for his coil and does not provide access to an outer surface of his coil. Nor does he form openings in a coil outer surface. Nor does he expose conductor in these openings in a coil outer surface for external contacts. Person's external contacts to his coil are located where metal lines 32 and 64 extend to an edge of their respective substrates. There they make contact with end pieces 12, 14. Person does not teach or suggest "forming openings in portions of said insulation on said coil outer surface and exposing conductor in said openings for external contacts."

Applicant would further respectfully ask the Examiner to consider that claim 1, as amended, includes the limit, "dicing completely through said coil to provide a plurality of short coils, wherein each said short coil has at least one said opening in said insulation, wherein each of said plurality of short coils has a short coil length that is less than said coil length."

Person's coils retain their original length after his dicing step. Person's dicing does not effect the length of each coil. Person does not teach or suggest fabricating a short coil that has a length that is less than the length of one of his original coils.

Thus, the rejection of claim 1, as amended, under 35 U.S.C. § 102 as being anticipated by Person has been traversed.

Claim 74, as amended, states:

74. The method as recited in claim 1, further comprising the step of providing a tube, said tube having an outer surface and an inner surface, wherein said providing step (a) comprises providing said coil inner surface and said insulation on said

tube outer surface.

Person's coil is fabricated as a layer of conductor on each board of a stack of boards. Person's technique is incompatible with forming the inner surface of the coil and the insulation on the tube outer surface, as provided in claim 74, as amended.

Claim 75, as amended, states:

75. The method as recited in claim 74, further comprising the steps of providing a movable core within said tube inner surface and moving said movable core within said tube inner surface for adjusting inductance of said coil.

Applicant would respectfully ask the Examiner to consider that a "moveable core," is a material that can move within the coil, as shown by element 52 in FIG. 4 and in FIGS. 7a-7c of the present invention. In view of Person's stack of boards, there is no possibility of providing a tube having a tube inner surface within Person's coil and no possibility of moving a moveable core within the tube inner surface. There is no open region inside the coil for providing such a moveable core. Thus, Person is incompatible with moving a moveable core as described in claim 75.

In addition, Claims 74 and 75 depend on claim 1 and should be allowable if claim 1 is allowable. Thus, the rejection of claims 74 and 75, as amended, under 35 U.S.C. § 102 as being anticipated by Person has been traversed.

Claim 103, as amended, states:

103. A method of fabricating an electronic device, comprising in order, the steps of:

a) providing a coil of conductor, an insulation, and a tube, said **coil of conductor having a coil outer surface and a coil inner surface**, said insulation on said coil outer surface, wherein said **tube has a tube outer surface and a tube inner surface**, and wherein said **coil of conductor and said insulation are on said tube outer surface**, further wherein said coil of conductor further comprises a coil length;

b) **forming openings in portions of said insulation on said coil outer surface** and exposing conductor of said coil for contacts;

c) dicing through said coil to provide a plurality of short coils, wherein each said short coil has at least one said opening in said insulation, **wherein each of said plurality of short coils has a**

short coil length that is less than said coil length; and

d) providing a movable core within said tube and providing for **moving said movable core within said tube for adjusting inductance of said coil.**

Applicant would respectfully ask the Examiner to consider that claim 103 includes the limit, "**said coil of conductor having a coil outer surface and a coil inner surface.**" Person's coil has its loops each mounted on a substrate. Hence Person's coil does not have either a coil outer surface or a coil inner surface.

Applicant would further respectfully ask the Examiner to consider that claim 103 includes the limit, "**forming openings in portions of said insulation on said coil outer surface** and exposing conductor in said openings for **contacts.**"

Person forms openings for internal contacts between loops but Person does not provide an outer surface for his coil and does not provide access to an outer surface of his coil. Nor does he form openings in a coil outer surface. Nor does he expose conductor in these openings in a coil outer surface for contacts. Person's external contacts to his coil are located where metal lines 32 and 64 extend to an edge of their respective substrates. There they make contact with end pieces 12, 14. Person does not teach or suggest "forming openings in portions of said insulation on said coil outer surface and exposing conductor in said openings for contacts."

Applicant would further respectfully ask the Examiner to consider that claim 103, as amended, includes the limit, "dicing through said coil to provide a plurality of short coils, wherein each said short coil has at least one said opening in said insulation, wherein each of said plurality of short coils has a short coil length that is less than said coil length."

Person's coils retain their original length after his dicing step. Person's dicing does not effect the length of each coil. Person does not teach or suggest fabricating a short coil that has a length that is less than the length of one of his original coils.

Applicant would further respectfully ask the Examiner to consider that a "moveable core," as provided in claim 103, is a material that can move within the coil, as shown by element 52 in FIG. 4 and in FIGS. 7a-7c of the present invention. In view of Person's stack of boards, there is no possibility of providing a tube having a tube inner surface within Person's coil and no possibility of moving a moveable core within the tube inner surface. There is no open region inside the coil for providing such a moveable core. Thus, Person is incompatible with moving a moveable core as described in claim 103.

Thus, the rejection of claim 103, as amended, under 35 U.S.C. § 102 as being anticipated by Person has been traversed.

Claim Rejections—35 U.S.C. § 103

The Examiner rejects claim 27 under 35 U.S.C. § 103(a) as being unpatentable over Person et al. However, applicant would respectfully ask the Examiner to consider that claim 27 depends on claim 1, and if claim 1 is allowable, so is claim 27.

The Examiner rejects claims 2, 3, and 100 under 35 U.S.C. § 103(a) as being unpatentable over Person et al in view of Lampe. The Examiner acknowledges that Person does not teach a wire or an insulated wire in which the wire is wound around the tube. The Examiner cites Lampe and states that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Person by forming the electronic device of an inductor in the alternative way, as taught by Lampe, to recognize the benefits of saving manufacturing costs and form an art recognized equivalent inductor."

However, applicant would respectfully ask the Examiner to consider that the method of Lampe cannot be combined with the method of Person without destroying Person's scheme. The wire winding method of Lampe used for forming the inductor is incompatible with the method of forming the inductor provided by Person from individual loops on a stack of substrates. Further invention would be required, for example, to provide the openings for external contacts provided in claim 1 from which claims 74, 2, 3, and 100 depend: neither reference individually or in combination teaches or suggests "forming openings in portions of said insulation on said coil outer surface and exposing conductor in said openings for external contacts," for an embodiment having wire windings.

The Examiner rejects claims 28-32 under 35 U.S.C. § 103(a) as being unpatentable over Person et al in view of Moyer. The Examiner acknowledges that "Person does not teach a structure of an electronically controllable clamp for resetting position of the core and a structure for holding a position of the core." The Examiner cites Moyer for this missing teaching.

However, applicant would respectfully ask the Examiner to consider that a "moveable core," is a material that can move within the coil, as shown by element 52 in FIG. 4 and in FIGS. 7a-7c of the present invention.

Moyer's invention involves an "air-core coil;" that is, Moyer describes a technique for adjusting inductance of a coil **that does not have a moveable core**. Moyer

adjusts position of "some of the turns of coil 20 and causes their linear displacement by sliding them perpendicularly to the coil centerline." The deformations to the coil that Moyer introduces would interfere with movement of such a core if there was one. Moyer merely provides a structure for holding and moving sections of the coil but not for holding position of a moveable core within.

On the other hand, Person does not allow for either the air-core coil of Moyer or for "a moveable core within the tube for adjusting inductance of said coil," as provided in claim 75 from which claim 28 depends. Person's coil is fabricated as a layer of conductor on each substrate of a stack of substrates. There is no open region inside the coil for providing a moveable coil. Thus, the teachings of Person are incompatible with the teachings of Moyer. They cannot be combined without destroying Person's essential purpose, to provide a coil from individual loops on a stack of substrates. Furthermore, Moyer has no moveable core within his air-core. So even if combining the references could be accomplished it would not provide the elements of claim 28. Neither reference, individually or in combination, teaches or suggests the idea of "providing a structure for holding position of a core within said tube."

The Examiner rejects claim 94 under 35 U.S.C. § 103(a) as being unpatentable over Person et al in view of Jennings. The Examiner acknowledges that "Person does not teach enclosing the coil in a housing and hermetically sealing the housing." However, applicant would respectfully ask the Examiner to consider that Jennings does not teach or suggest hermetically sealing either. The vacuum seal provided in Jennings is merely a temporary seal between the housing and the base for use during the processing step provided in Jennings. A hermetic seal by contrast is a seal that remains a seal after processing is complete. Furthermore, claim 94 depends on claim 75 which has a moveable core, and neither Jennings nor Person provides a moveable core. And claim 75 itself depends on claims 74 and 1, and neither reference individually or in combination teaches or suggests limits of claim 1, as described herein above that are missing from Person.

The Examiner rejects claims 95-99 under 35 U.S.C. § 103(a) as being unpatentable over Person et al in view of JP '487. The Examiner acknowledges that "Person does not teach forming the openings in the insulation by laser ablating the insulation. Applicant would respectfully ask the Examiner to consider that claims 95-99 depend on claim 75 which has a moveable core, and neither Person nor Jennings nor JP '487 provides a moveable core. And claim 75 itself depends on claims 74 and 1, and neither reference, individually or in combination, teaches or suggests the limits of those claims, as described herein above that are missing from Person. Furthermore, claim 98 provides a process that is incompatible with the process of Person, since Person does not make contact to the coil by "opening said insulation over a plurality of said turns of wire," as provided in claim 98. Also, a ring-shaped opening provides advantage since

contact can be made anywhere along the ring and alignment is not needed. None of the references, individually or in combination teach a ring-shaped opening as the Examiner acknowledges in the office action.

The Examiner rejects claims 76-80, 81-82, 92, and 93 under 35 U.S.C. § 103(a) as being unpatentable over Person et al in view of Jones. The Examiner acknowledges that Person does not teach providing a substrate and surface mounting the coil to the substrate. However, claims 76-80, 81-82, 92, and 93 depend on claim 75 which has a moveable core, and neither Person nor Jones, individually nor in combination, provides a moveable core. Furthermore, a moveable core appears to be incompatible with the teachings of Person. Further invention would be needed to overcome the incompatibility. And claim 75 itself depends on claims 74 and 1, and neither reference, individually or in combination, teaches or suggests the limits described herein above that are missing from Person.

The Examiner rejects claim 83-86 under 35 U.S.C. § 103(a) as being unpatentable over Person in view of Jones as applied to claims 1, 74-76, 81, and 82 above, and further in view of Jennings. However, claims 83-86 depend on claim 1, and none of the references, individually or in combination, teach or suggest the limits described herein above that are missing from Person.

The Examiner rejects claim 102 under 35 U.S.C. § 103(a) as being unpatentable over Jones et al in view of Person et al. The Examiner acknowledges that Jones does not teach the specific steps of (a), (b) or (c) for the component.

Claim 102 provides:

102. A method of fabricating an electronic device, comprising in order, the steps of:

a) providing a coil of conductor and an insulation, **said coil of conductor having a coil outer surface and a coil inner surface**, said insulation on said coil outer surface, said coil of conductor further comprising a coil length;

b) **forming openings in portions of said insulation on said coil outer surface and exposing conductor in said openings for external contacts;**

c) dicing through said coil to provide a plurality of short coils, wherein each said short coil has at least one said opening in said insulation, **wherein each of said plurality of short coils has a short coil length that is less than said coil length;**

d) providing a substrate;

e) surface mounting said coil to said substrate;

f) mounting additional electronics on said substrate;

g) connecting said additional electronics to said coil; and

h) providing a housing for holding said coil, said substrate, and said additional electronics.

Applicant would respectfully ask the Examiner to consider that claim 102 includes the limit, "**said coil of conductor having a coil outer surface and a coil inner surface.**" Person's coil has its loops each mounted on a substrate. Hence Person's coil does not have either a coil outer surface or a coil inner surface. Jones does not supply this limit either. Neither Person nor Jones, individually nor in combination teach this limit.

Applicant would further respectfully ask the Examiner to consider that claim 102 includes the limit, "**forming openings in portions of said insulation on said coil outer surface** and exposing conductor in said openings for **external contacts.**"

Person forms openings for internal contacts between loops but Person does not provide an outer surface for his coil and does not provide access to an outer surface of his coil. Nor does he form openings in a coil outer surface. Nor does he expose conductor in these openings in a coil outer surface for external contacts. Person's external contacts to his coil are located where metal lines 32 and 64 extend to an edge of their respective substrates. There they make contact with end pieces 12, 14. Jones does not supply this limit either. Neither Person nor Jones, individually nor in combination teach this limit.

Applicant would further respectfully ask the Examiner to consider that claim 102, as amended, includes the limit, "dicing through said coil to provide a plurality of short coils, wherein each said short coil has at least one said opening in said insulation, wherein each of said plurality of short coils has a short coil length that is less than said coil length."

Person's coils retain their original length after his dicing step. Person's dicing does not effect the length of each coil. Person does not teach or suggest fabricating a short coil that has a length that is less than the length of one of his original coils. Jones does not supply this limit either. Neither Person nor Jones, individually nor in combination teach this limit.

Thus, the rejection of claim 102 under 35 U.S.C. § 103 as being unpatentable over Jones in view of Person has been traversed.

It is believed that all the claims are in condition for allowance. Therefore, applicant respectfully requests favorable reconsideration. If there are any questions please call applicant's attorney at 802 864-1575.

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